

ADULT FEEDING IN TWO SPECIES OF CHIRONOMIDAE (DIPTERA)

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For years it was reported that adult Chironomidae do not feed, and that all energy for the adult functions of reproduction and dispersion was derived through the catabolism of fat reserves which were accumulated during the larval stage. Recent reports (Downes, 1974; Schlee, 1977) indicate adult feeding on nectar and honeydew is widespread; indeed, between those two sources, they list a total of 44 genera observed feeding. Downes (1974) suggests this behavior prolongs adult activity, especially flight.

Recently, I observed hundreds of adult Chironomidae, both males and females, feeding on droplets of sugary liquid which collected in the flowers of an ornamental *Rhododendron* after a heavy rain (1 June 1980, Pittsburgh, Pennsylvania, U.S.A., 19:00 hours). At least two species were present, *Smittia* sp. and *Pseudosmittia* sp.. Both genera have previously been reported to feed on honeydew (Downes, 1974). Representative specimens were collected and preserved in 70% ethyl alcohol.

Dissection of several females revealed the presence of immature follicles in the ovaries. However, no fat bodies were evident in the abdominal cavity. Together, these two observations indicate these females had already oviposited the initial egg batch and were beginning to mature a second batch. Most of the females collected were in this condition. Presumably, female chironomids imbibe plant sugars to obtain the energy needed for both oogenesis of subsequent egg batches and dispersion to favorable sites for oviposition. Supportive of this, is evidence gathered during my doctoral research (Seward, 1980) which suggests the maturation of additional egg batches is a common phenomenon. Likewise, presumably, males feed to prolong their ability to produce sperm and locate potential mates.

In light of these observations and evidence previously gathered, I feel the importance of adult feeding in the Chironomidae on the reproductive functions has not been realized. For many species, the intake of plant sugars probably allows females to mature and oviposit additional egg batches and males to sustain their reproductive function.

REFERENCES

- Downes, J.A. 1974. The feeding habits of adult Chironomidae. Ent. Tidskr., Suppl., 95: 84-90.
- Schlee, D. 1977. Florale und extraflorale nektarien sowie insektenkot als nahrungsquelle für Chironomidae - imagines (und andere Diptera). Stuttgarter Beitr. Naturk., Ser. A, 300, 146.
- Seward, R.M. 1980. A study of fecundity in the Chironomidae with emphasis on intra- and inter-specific variability in primary follicle number. Ph. D. Thesis. Univ. of Pittsburgh, Pittsburgh, PA.

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